IN THE ABSTRACT

Please amend the Abstract of the Disclosure as set forth below.

Line 7, change "step 1" to --a step--;

line 8, change "step 2" to --a step--;

line 11, change "step 3" to --a step--;

line 12, change "step 4" to --a step--;

line 13, change "step 6" to --a step--;

line 14, after "a step" delete "6".

REMARKS

Applicants request reconsideration of the rejection.

Upon entry of the above amendments, claims 1-12 and 16-19 are pending.

The Examiner indicated, on page 2 of the Office Action, that two of the documents cited in the Information Disclosure Statement filed October 27, 1998 were not considered because copies were not enclosed with the Statement. The Applicants note that the documents correspond to Boom et al U.S. Patent No. 5,234,809 and Seligson et al U.S. Patent No. 4,935,342, respectively, which were also cited in the Statement and which were considered by the Examiner.

Claims 1-13 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly being nonenabled for accelerators, solid phases, and washing solutions other than those

specifically set forth in the dependent claims. The Applicants respectfully traverse.

The Examiner asserted that the specification enables guanidine hydrochloride as the accelerator, but not other accelerators. Pages 34 and 35 of the specification, however, note other examples that can be used as the accelerator, including NaI, KI, $NaClO_4$, NaSCN, GuSCN, "and other chaotropic agents." The specification does note drawbacks to some of these substances as accelerators, but they are nevertheless supported. Furthermore, the person of ordinary skill, given the teaching of these specific examples and of their advantages and disadvantages, can readily determine other substances that are suitable as accelerators.

As to solid phases, the Examiner notes the specification support for silicon dioxide, but states that the specification does not support other solid phases. In reply, the Applicants refer the Examiner to pages 35 and 36 of the specification, wherein it is stated that "any silicon dioxide-containing substance can be employed, including glass beads, silica powder, quartz filter paper, quartz wool or crushed products of these substances, and diatomaceous earth." However, claims 1, 6 and 7 have been amended to state that the solid phase contains silicon dioxide.

Similarly, the washing solution is not limited by that set forth in claims 5, 10 or 11. Note page 39 of the specification, for example, which states that the washing

solution contains "an acetate or chloride." Examples, including an aqueous solution containing 0.5 mol/liter or more of potassium acetate and an aqueous solution containing 0.2 mol/liter of potassium chloride, are given. Furthermore, Table 1, page 16 of the specification, lists additional components of washing solutions that may be suitably used. Each of these examples suggests a broader scope to the washing solution of the claims than is found in the specific recital of the dependent claims noted by the Examiner.

Claims 1-13 also stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for minor informalities noted on page 3 of the Office Action. The claims have been amended to address these and any other informalities noted in the original claims.

Claims 1-13 were also rejected under 35 U.S.C. §103 as being unpatentable over Boom et al U.S. Patent No. 5,234,809 (Boom) in view Seligson et al U.S. 4,935,342 (Seligson). However, both of these documents (which were submitted by the Applicants and are thoroughly familiar to them) differ from the claimed invention as follows.

There are clear differences between the claimed washing steps and the washing steps taught by Boom and Seligson. Claim 1, for example, recites that the washing is performed with a solution containing an acetate. Claim 6 requires the washing to be performed with a solution containing 0.2 mol/liter or more of potassium chloride. Claim 7 requires

that the washing be performed with a mixture of an aqueous solution containing a salt and an alcohol. All three of these independent claims require that the washing step be performed without heating during the washing. Each of the methods set forth in these claims is efficient and environment-friendly.

On the other hand, Boom requires washing with an ethanol-water solution and acetone, followed by a drying step to remove the acetone prior to elution. The drying step is required to remove the acetone. Therefore, the Boom method has a high degree of inflammability due to the high concentration of alcohol and organic solvent. Further, the organic solvent is released to the environment, and is a known contaminant to the environment.

On the other hand, the acetate solution of claim 1 is a salt that contains a low concentration of alcohol, and is stable, so that the degree of inflammability is low. Moreover, there is no release of harmful matter to the environment. Thus, the claimed method is both efficient and safe by comparison with the method of Boom.

Seligson does not add teachings to the Boom teachings to meet the claimed acetate solution. Seligson discloses washing with a chloride salt, but this results in a final "purified" nucleic acid that contains chloride ions, which should be avoided when the nucleic acids are to be used for cell-free translation or reverse transcription. See, for example, the enclosed excerpt from Sambrook, et al, "Commonly Used

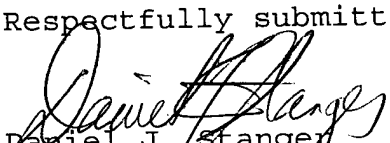
Techniques in Molecular Cloning." 2nd Edition, CSH, 1989. The acetate solution of claim 1 avoids such a problem.

Claim 6 and claim 7 recite a washing step that includes a solution containing potassium chloride and salt, respectively. Both of these washing steps are required to be performed "without heating during the washing". On the other hand, Boom requires heating to remove the acetone. Column 4, lines 27-28. Therefore, the combination of Boom and Seligson fails to render obvious claims 6 and 7.

By virtue of the patentability of each of the independent claims as discussed above, the Applicants submit that each dependent claim patentably defines over the prior art. Therefore, additional arguments supporting separate patentability of these claims will not be set forth at this time.

In view of the foregoing amendments and remarks, the Applicants request reconsideration of the rejection and allowance of the claims.

Respectfully submitted,



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